

## CLAIMS

We claim:

1. An isolated polynucleotide encoding a ligand-binding receptor polypeptide, said polypeptide being defined by amino acid residues 18 to 228 of SEQ ID NO:2.
2. An isolated polynucleotide according to claim 1 wherein said polypeptide further comprises a transmembrane domain.
3. An isolated polynucleotide according to claim 2 wherein said transmembrane domain comprises residues 229 to 251 of SEQ ID NO:2.
4. An isolated polynucleotide according to claim 2 wherein said polypeptide further comprises an intracellular domain.
5. An isolated polynucleotide according to claim 4 wherein said intracellular domain comprises residues 252 to 574 of SEQ ID NO:2.
6. An isolated polynucleotide according to claim 1 which is a DNA as shown in SEQ ID NO:1 from nucleotide 34 to nucleotide 1755.
7. An isolated polynucleotide according to claim 1 wherein said polypeptide further comprises an affinity tag.
8. An isolated polynucleotide according to claim 7 wherein said affinity tag is polyhistidine, protein A, glutathione S transferase, substance P, or an immunoglobulin heavy chain constant region.

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9. An isolated polynucleotide according to claim 1 wherein said polynucleotide is DNA.
10. An isolated polynucleotide encoding a polypeptide selected from a group defined SEQ ID NO:2 consisting of residues 1 to 228, residues 1 to 251, residues 1 to 574, residues 2 to 228, residues 2 to 251, residues 2 to 574, residues 229 to 251, residues 229 to 574 and residues 252 to 574.
11. An expression vector comprising the following operably linked elements:
- a transcription promoter;
  - a DNA segment encoding a ligand-binding receptor polypeptide, said polypeptide being defined by amino residues 18 to 228 of SEQ ID NO:2; and
  - a transcription terminator.
12. An expression vector according to claim 11 wherein said polypeptide further comprises a signal sequence.
13. An expression vector according to claim 11 wherein said polypeptide further comprises a transmembrane domain.
14. An expression vector according to claim 11 wherein said transmembrane domain comprises residues 229 to 251 of SEQ ID NO:2.
15. An expression vector according to claim 13 wherein said polypeptide further comprises an intracellular domain.
16. An expression vector according to claim 15 wherein said intracellular domain comprises residues 252 to 574 of SEQ ID NO:2.

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17. An expression vector according to claim 11 wherein further comprising a DNA sequence encoding an affinity tag.

18. An expression vector according to claim 17 wherein the affinity tag is an immunoglobulin F<sub>C</sub> polypeptide.

19. A transformed or transfected cell into which has been introduced an expression vector according to claim 11, wherein said cell expresses a receptor polypeptide encoded by the DNA segment.

20. An isolated polypeptide defined by residues 18-228 of SEQ ID NO: 2.

21. The isolated polypeptide of claim 20 further containing either a sequence which defines a transmembrane domain or a sequence which defines an intracellular domain or both.

22. The isolated polypeptide of claim 23 wherein the transmembrane domain is defined by amino acid residues 229-251 of SEQ ID NO: 2 and the intracellular domain is defined by amino acid residues 252-574 of SEQ ID NO:2.

23. An isolated polypeptide according to claim 20 further containing a sequence which defines an affinity tag.

24. A method for detecting a ligand within a test sample, comprising contacting a test sample with a polypeptide comprising residues 18 to 228 of SEQ ID NO:2; and detecting binding of said polypeptide to a ligand in the sample.

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25. ~~An antibody that specifically binds to a polypeptide of claim 20.~~

26. ~~An anti-idiotypic antibody which binds to an antigenic binding site of an antibody of claim 25.~~

27. ~~An isolated polypeptide selected from the group consisting of residues 1 to 228, residues 1 to 251, residues 1 to 574 residues 2 to 228, residues 2 to 551, and residues 2 to 574 of SEQ ID NO: 2.~~

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